


IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended): A process for the synthesis of hydrogen cyanide, comprising:

reacting methane or methane-containing natural gas, ammonia and oxygen-enriched air or oxygen in the presence of a catalyst comprising platinum or a platinum alloy;

wherein oxygen and nitrogen are present in a molar ratio which satisfies the following relationship:


$$\frac{[O_2]}{[O_2 + N_2]} = 0.25 \text{ to } 1.0;$$

wherein methane and ammonia are present in a molar ratio of

$$\frac{[CH_4]}{[NH_3]} = 0.95 \text{ to } 1.05;$$

and wherein a molar ratio of ammonia to the sum of oxygen and nitrogen satisfies the following relationship:

$$Y = m \cdot X - a,$$

wherein

$$Y = \frac{[NH_3]}{[O_2 + N_2]},$$

$$X = \frac{[O_2]}{[O_2 + N_2]},$$

m = 1.25 to 1.40 and

a = 0.05 to 0.14; and

~~wherein said methane-containing natural gas contains at least 88 vol.% of methane.~~

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Claim 2 (Original): The process according to Claim 1, wherein said molar ratio of oxygen and nitrogen is

$$\frac{[O_2]}{[O_2 + N_2]} = 0.25 \text{ to } 0.40.$$

Claim 3 (Original): The process according to Claim 1, wherein said molar ratio of methane and ammonia is

$$\frac{[CH_4]}{[NH_3]} = 0.98 \text{ to } 1.02.$$

Claim 4 (Original): The process according to Claim 1, wherein m = 1.25 to 1.33 and a = 0.07 to 0.11.

Claim 5 (Original): The process according to Claim 1, wherein the starting-gas mixture is preheated to at most 150°C.

Claim 6 (Original): The process according to Claim 1, wherein a volume flow for ammonia and methane or the methane-containing natural gas is calculated and controlled as a function of a molar ratio $X = O_2/(N_2 + O_2)$ using a process control system.

Claim 7 (Canceled):

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Claim 8 (Original): The process according to Claim 1, wherein said process is performed in a conventional Andrussov-reactor.

Claims 9-14 (Canceled).

Claim 15 (Reinstated formerly Claim 7): The process according to Claim 1, wherein said methane-containing mixture gas contains at least 88 vol.% of methane.
